SPEC® CINT2006 Result
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IBM Corporation

IBM System x iDataPlex dx360 (Intel Xeon E5440)

SPECint®_rate2006 = 136

SPECint_rate_base2006 = 126

CPU2006 license: 11

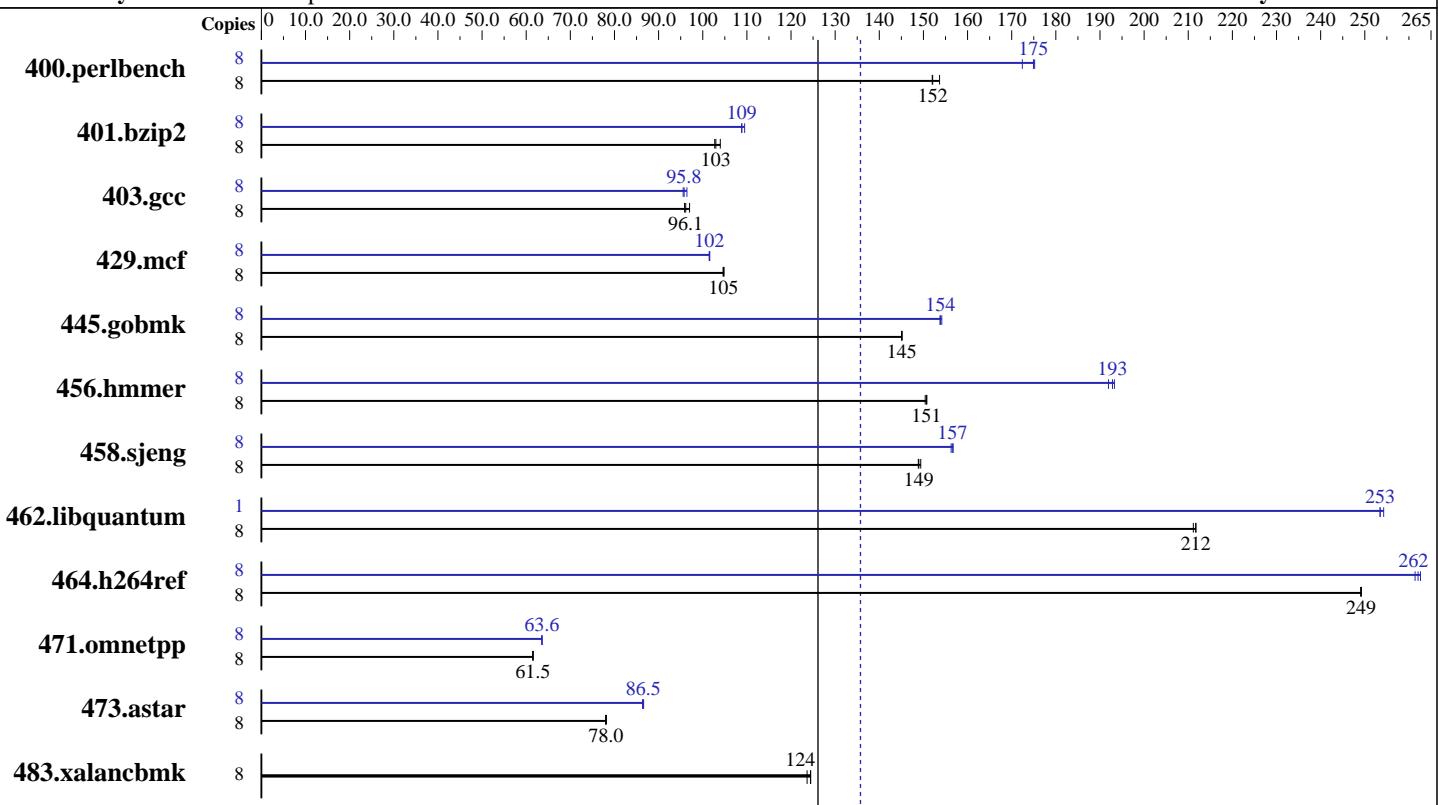**Test sponsor:** IBM Corporation

Tested by: IBM Corporation

Test date: Apr-2009

Hardware Availability: Nov-2008

Software Availability: Feb-2009

Copies	
400.perlbench	8 / 175 ; 8 / 152
401.bzip2	8 / 109 ; 8 / 103
403.gcc	8 / 95.8 ; 8 / 96.1
429.mcf	8 / 102 ; 8 / 105
445.gobmk	8 / 154 ; 8 / 145
456.hmmer	8 / 193 ; 8 / 151
458.sjeng	8 / 157 ; 8 / 149
462.libquantum	1 / 253 ; 8 / 212
464.h264ref	8 / 262 ; 8 / 249
471.omnetpp	8 / 63.6 ; 8 / 61.5
473.astar	8 / 86.5 ; 8 / 78.0
483.xalancbmk	8 / 124

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Hardware

CPU Name:	Intel Xeon E5440
CPU Characteristics:	1333MHz system bus
CPU MHz:	2833
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8 x 2 GB DDR2-5300F ECC)
Disk Subsystem:	1 x 250 GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10(x86_64) SP2, Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ Compiler 11.0 for Linux Build 20080930 Package ID: l_cproc_p_11.0.066
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V8.1 Binutils 2.18.50.0.7.20080502

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	**514**	**152**	514	152	509	154	8	453	172	**447**	**175**	446	175
401.bzip2	8	752	103	**750**	**103**	742	104	8	705	109	**709**	**109**	710	109
403.gcc	8	**670**	**96.1**	664	97.0	672	95.9	8	668	96.4	**672**	**95.8**	674	95.6
429.mcf	8	696	105	697	105	**697**	**105**	8	718	102	**718**	**102**	719	101
445.gobmk	8	**578**	**145**	579	145	578	145	8	546	154	**545**	**154**	544	154
456.hmmer	8	495	151	496	150	**495**	**151**	8	386	193	389	192	**387**	**193**
458.sjeng	8	648	149	650	149	**650**	**149**	8	618	157	**618**	**157**	619	156
462.libquantum	8	785	211	**783**	**212**	783	212	1	**81.7**	**253**	81.5	254	81.7	253
464.h264ref	8	711	249	710	249	**710**	**249**	8	677	261	674	263	**676**	**262**
471.omnetpp	8	**812**	**61.5**	812	61.6	814	61.5	8	**787**	**63.6**	786	63.6	787	63.6
473.astar	8	720	78.0	**720**	**78.0**	718	78.2	8	**649**	**86.5**	650	86.4	648	86.6
483.xalancbmk	8	444	124	**444**	**124**	446	124	8	444	124	**444**	**124**	446	124

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.

General Notes

    taskset was used to bind processes to cores except
    for 462.libquantum peak
    Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Disable
    OMP_NUM_THREADS set to number of processors
    KMP_AFFINITY set to "physical,0"
    KMP_STACKSIZE set to 64M

Base Compiler Invocation

C benchmarks:
        icc

C++ benchmarks:
        icpc

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32

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Base Portability Flags (Continued)

```
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3 -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/spec/cpu2006.1.1/lib -lsmartheap
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

```
401.bzip2: /opt/intel/Compiler/11.0/066/bin/intel64/icc
```

```
456.hmmer: /opt/intel/Compiler/11.0/066/bin/intel64/icc
```

C++ benchmarks:
```
icpc
```

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
    401.bzip2: -DSPEC_CPU_LP64
    456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

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Peak Optimization Flags

C benchmarks:

    400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -ansi-alias -opt-prefetch

       401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                  -no-prec-div -static -opt-prefetch -ansi-alias

         403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-calloc
                  -opt-malloc-options=3

         429.mcf: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                  -no-prec-div -static -opt-prefetch

       445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -O2 -ipo
                  -no-prec-div -ansi-alias

       456.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
                  -ansi-alias

       458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                  -no-prec-div -static -unroll4

    462.libquantum: -xSSE4.1 -ipo -O3 -no-prec-div -static
                    -opt-malloc-options=3 -parallel -par-runtime-control
                    -opt-prefetch

      464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

      471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -ansi-alias -opt-ra-region-strategy=block
                   -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

        473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
                   -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap

    483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

         403.gcc: -Dalloca=_alloca

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The flags file that was used to format this result can be browsed at

`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.17.html`

You can also download the XML flags source by saving the following link:

`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.17.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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